

~~1A~~. (New) A headphone-type audio signal

reproducing apparatus comprising:

a user-removable semiconductor memory unit for storing digitized and high-efficiency compression encoded audio data;

a decoder for reading out data stored in the semiconductor memory unit and for decoding the read-out data by performing an inversion of the compression encoding;

a digital/analog converter for converting output signals from the decoder into analog signals;

a headphone unit for receiving the analog signals from the digital/analog converter and converting the analog signals from the digital/analog converter into acoustic sounds; and

a lightweight housing for containing the semiconductor memory unit, the decoder, the digital/analog converter and the headphone unit, the lightweight housing being compact and adapted for placement on a user's head,

wherein the audio data has been compression encoded by dividing input digital signals into a plurality of frequency bands such that bandwidths of the bands are broader for progressively higher frequency bands and each frequency band has a corresponding energy level, setting

an allowable noise level on a band-by-band basis in accordance with the energy level of each frequency band, including setting the allowable noise level for a given energy level progressively higher for progressively higher frequencies, and quantizing the components of each band with a number of bits corresponding to a difference in level between the energy of each frequency band and the preset allowable noise level, including adjusting the number of bits allocated upon quantizing according to the allowable noise level, and wherein the decoder performs the inversion of the compression encoding.

2
-5. (New) The headphone-type audio signal reproducing apparatus according to claim ¹4, further comprising a battery for powering the decoder, the digital/analog converter, and the headphone unit and being arranged in the housing.

3
-6. (New) The headphone-type audio signal reproducing apparatus according to claim ¹4, wherein the headphone unit comprises a left earphone unit and a right earphone unit attached to the housing for placement at respective left and right ears of the user.

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~~7~~. (New) The headphone-type audio signal reproducing apparatus according to claim ⁴~~4~~, wherein said semiconductor memory unit comprises a semiconductor chip with a playback time of at least 33 minutes.

~~8~~. (New) A method for reproducing audio signals using a portable apparatus comprising the steps of:

storing digitized and high-efficiency compression encoded audio data in a user removable semiconductor memory;

reading out data stored in the semiconductor memory and decoding the read-out data by performing an operation that is an inversion of the compression encoding;

converting digital data output from the decoder into analog signals;

receiving the analog signals from the digital/analog converter and converting the analog signals from the digital/analog converter using an earphone unit into acoustic sounds for listening by the user; and

containing the semiconductor memory, the decoder the digital/analog converter, and the earphone unit in a lightweight housing adapted for placement on a user's head, and wherein the operation of compression encoding comprises the steps of dividing input digital signals